

REMARKS

In response to the Examiner's Office Action, Paper No./Mail Date 20070903, dated September 4, 2007, Applicant has carefully studied the references cited by the Examiner and the Examiner's comments relative thereto.

Claims 1, 12, 22, and 24 have been amended.

Claims 11, 23, and 25 have been cancelled.

Claims 26-44 have been added.

Claims 1-10, 12-22, 24, and 26-44 remain in the application.

No new matter has been added.

Reconsideration of the application, as amended, is respectfully requested.

Interview

Applicant acknowledges with thanks Examiner Vo for the courtesy extended during an interview attended by the Applicant, Mr. Frank Semersky and Applicant's attorneys, J. Douglas Miller, Esq. and Michael E. Dockins, Esq., on November 19, 2007. During the interview, Claim 1 was discussed. Applicant's representatives asserted that the cited Park, Hayes, and Kocher references disclose foamed sheets and containers formed from a thermoforming process. However, the references do not disclose reheat stretch blow molded containers having a foamed layer and a threaded portion adapted to receive a cooperating closure, nor do the references disclose a preform for reheat stretch blow molding containers having a foamed layer and a threaded portion adapted to receive a cooperating closure. During the interview, Examiner Vo, Applicant, and Applicant's attorneys discussed the differences between the thermoforming process and the reheat stretch blow molding process.

Thermoforming is a manufacturing process for plastic sheets or films. Exhibit A (attached) is a schematic diagram of a typical thermoforming process. First, a sheet of plastic 10 is preheated between infrared, natural gas, or other heaters (not shown) until the sheet of plastic 10 has softened. Next, the sheet of plastic 10 is disposed over a cavity 12 formed by a female mold 14. A male plug 16 having a shape corresponding to the shape of the cavity 12 of the female mold 14 is then caused to press the sheet of the plastic 10 into the cavity 12 of the female mold 14. Because the sheet of plastic 10 has been softened, as the male plug 16 exerts a force on the sheet of plastic 10, the sheet of plastic 10 conforms to the shape of the cavity 12 of the female mold 14. The sheet of plastic 10 is held against the female mold 14

surface until the sheet of plastic 10 has cooled. A formed part, such as a tray, plate, or bowl, is then trimmed from the sheet of plastic 10. Due to the nature of the thermoforming process, complex parts having threaded portions, undercuts, and complex geometries may not be formed. A female mold having a cavity for forming threaded portions, undercuts, and complex geometries would militate against the removal of the formed part from the female mold or the removal of a male plug from the formed part once the process was complete. Accordingly, containers having threaded portions and complex geometries cannot be formed with the thermoforming process.

Reheat stretch blow molding is a manufacturing process for forming bottles and other containers having complex geometries including a threaded portion. Exhibit B (attached) is a schematic diagram of a typical reheat stretch blow molding process. In the reheat stretch blow molding process, a plastic is formed into a preform 10 using the injection molding process. A threaded portion 12 (known in the art as a “finish”) is formed on an end of the preform 10. After the injection molding operation, the preform 10 is allowed to cool. The preform 10 is then reheated in a blow molding machine to a temperature above a glass transition temperature. After the preform 10 is reheated, the reheated preform 10 is disposed in a mold 14. Once disposed in the mold 14, a core rod 16 stretches the preform 10 resulting in a strain hardening of the plastic used to form the preform 10. As the core rod 16 causes the preform 10 to stretch towards a bottom of the mold 14, a low pressure fluid such as air is introduced to an interior of the preform 10 forming a bubble 18. Once the core rod 16 is fully extended, high pressure fluid is introduced to the interior of the preform 10 and the bubble 18 and the preform 10 is blown into the shape of the mold 14. The mold 14 is then opened and a finished product is removed. The finished product is a container 20 having a threaded finish, as shown in Exhibit B. Because the mold 14 is completely opened and the finished product removed, the finished product may have a complex geometry including a threaded portion, varying cross-sectional shapes and sizes, and the like.

Exhibit C is an enlarged view of a threaded finish 22 for the container 20. Further, Exhibit C includes a detailed explanation of the design considerations and geometrical complexities of the finish 22, including dimensions T, E, I, S, L, H, and W which must be carefully considered and appropriately designed when forming the finish 22 for the container 20. Also shown is a plurality of finishes 22 commonly formed on a plastic container for a variety of corresponding closures. The closures (not shown) cooperate with the threaded finish 22 to form a seal.

After further consideration, the Examiner suggested amending Claim 1 to include a threaded portion adapted to receive a cooperating closure to overcome the Park, Hayes, and Kocher references. It was agreed that Applicant would submit the present amended Claim 1 in a Request for Continued Examination.

35 U.S.C. § 102(b)

The Examiner rejected Claims 1-2, 5, 8-10, 12, 13, 16-19 and 22 as being anticipated under 35 U.S.C. § 102(b) by U.S. Patent No. 5,149,579 to Park et al. for POLYPROPYLENE FOAM SHEETS.

Claim 1 of the application, as amended, reads as follows:

A blow molded container, comprising:
a first layer of plastic suitable for blow molding;
a second layer of plastic suitable for blow molding contacting said first layer,
said second layer of plastic formed as a foam wherein the foam cells
contain one of carbon dioxide and nitrogen; and
a threaded portion formed at an end of the container adapted to receive a
cooperating closure.

Claim 1 recites a blow-molded container having “a threaded portion formed at an end of the container adapted to receive a cooperating closure”. As acknowledged by the Examiner during the Interview and in the September 4, 2007 Office Action, Park discloses a foamed sheet used for thermoforming, and Park does not disclose a container or a preform having a threaded portion. Accordingly as discussed above, because a container having a threaded portion may not be formed with the thermoforming process, Park does not anticipate the Claim 1, as amended. As a result, the Park reference cannot properly serve as a basis for rejection of independent Claim 1 or Claims 2, 5, 8-10, 12, 13, and 16-19, which depend therefrom, under 35 U.S.C. 102(b).

Because independent Claims 22-24 and 26 contain at least the same limitations as Claim 1, the Park reference cannot properly serve as a basis for rejection therefor.

35 U.S.C. § 102(e)

The Examiner also rejected Claims 1-10, 22, and 23 as being anticipated under 35 U.S.C. § 102(e) by U.S. Patent No. 6,485,819 to Hayes et al.

Claim 1 of the application may be read above.

Claim 22 of the application reads as follows:

A multilayer preform for forming a blow molded container, comprising:
a first layer of plastic suitable for blow molding;
a second layer of plastic suitable for blow molding contacting said first layer, said second layer of plastic formed as a foam wherein the foam cells contain one of carbon dioxide and nitrogen; and
a threaded portion formed at an end of the preform and adapted to receive a cooperating closure.

Claim 23 of the application reads as follows:

A multilayer preform for forming a blow molded container, comprising:
a first layer of polyethylene terephthalate suitable for blow molding; and
a second layer of plastic suitable for blow molding contacting said first layer, said second layer of plastic formed as a foam wherein the foam cells contain one of carbon dioxide and nitrogen; and
a threaded portion formed at an end of the preform adapted to receive a cooperating closure.

Claims 1, 22, and 23 recite “a threaded portion formed at an end of the container adapted to receive a cooperating closure”. As acknowledged by the Examiner during the Interview, Hayes does not disclose a container or a preform having a threaded portion. Accordingly, Hayes does not anticipate the Claims 1, 22, or 23, as amended. As a result, the Hayes reference cannot properly serve as a basis for rejection of independent Claims 1, 22, and 23 or Claims 2-10 which depend, directly or indirectly, therefrom under 35 U.S.C. 102(e).

Because independent Claims 22-24 and 26 contain at least the same limitations as Claim 1, the Park reference cannot properly serve as a basis for rejection therefor.

35 U.S.C. § 103(a)

The Examiner rejected Claims 1-2, 5, 8-10, 12, 13, 16-19 and 22 as being obvious over Park and Claims 1-10, 22, and 23 as being obvious over Hayes under 35 U.S.C. § 103(a).

The Examiner also rejected Claims 3, 4, 6, 7, 14, 15, 20, 21, and 23-25 as being obvious over Park further in view of Hayes; Claims 12-17 and 24 as being obvious over Hayes further in view of Park; Claims 18-21 and 25 as being obvious over Hayes further in view of U.S. Patent No. 5,149,579 to Haase et al.; and Claims 1-10, 22, and 23 as being obvious over U.S. Patent No. 5,919,547 to Kocher et al. further in view of Hayes.

As discussed above, neither Park nor Hayes disclose “a threaded portion formed at an

end of the container adapted to receive a cooperating closure”. More importantly, even if Park and Hayes are combined with the other references cited, the combination of references does not produce each and every limitation of independent Claims 1, 22-24, and 26. All of the independent claims recite “a threaded portion formed at an end of the container adapted to receive a cooperating closure”. None of the cited references require “a threaded portion adapted to receive a cooperating closure”. As a result, no combination of references can properly serve as a basis for rejection of independent Claims 1, 22-24 and 26 or Claims 2-21 dependent therefrom, under 35 U.S.C. 103(a).

Accordingly, withdrawal of the rejections under 35 U.S.C. §103(a) is respectfully requested.

Added Claims

Claim 27 of the application reads as follows:

A multilayer preform for forming a blow molded container, comprising:
a first layer of plastic; and
a second layer of foamed plastic contacting said first layer, said first layer and said second layer formed by a single melt of plastic to produce a multi-layered preform for blow molding, wherein foam cells formed in said second layer contain a fluid.

Claim 38 of the application reads as follows:

A multilayer preform for forming a blow molded container, comprising:
a first layer of plastic; and
a second layer of foamed plastic contacting said first layer, said first layer and said second layer formed by injection of a fluid in a supercritical state into a single melt of plastic to produce a multi-layered preform for blow molding, wherein foam cells formed in said second layer contain the fluid.

Claims 27 and 38 recite a first layer of plastic and a second layer of plastic formed as a foam, wherein both the first layer and the second layer are formed from a single melt of plastic, and wherein the foam cells contain a fluid. The preforms of Claims 27 and 38 are adapted to be blow molded into a container. Neither Park nor Hayes nor any of the references relied on by the Examiner disclose the formation of a first layer of plastic and a second layer of plastic formed from a single melt of plastic. Furthermore, none of the references disclose the injection of a fluid in a supercritical state into a single melt of plastic to produce a foamed plastic layer, as recited in Claim 38. Accordingly, none of the cited references anticipate the Applicant's invention. As a result, none of the references can properly serve as a basis for rejection of independent Claims 27 and 37 or Claims 27-37 and 39-44, which depend therefrom, respectively under 35 U.S.C. 102, and Claims 27-44 are allowable.

Furthermore, because none of the references disclose the formation of a first layer of plastic and a second layer of plastic formed from a single melt of plastic, even if there were a motivation or suggestion to combine the references, no combination will produce the limitation. As a result, no combination of references can properly serve as a basis for rejection of independent Claims 27 and 37 nor any of the dependent claims under 35 U.S.C. § 103(a).

The other references cited by the Examiner, but not applied, have been studied and are not considered to be any more pertinent than the references relied upon by the Examiner.

It is submitted that the claims distinctly define the Applicant's invention and distinguish the same from the prior art. Reconsideration of the application, as amended, is respectfully requested. A formal Notice of Allowance is solicited.

While the Applicant's attorney has made a sincere effort to properly define Applicant's invention and to distinguish the same from the prior art, should the Examiner deem that other language would be more appropriate, it is requested that a telephone interview be had with the Applicant's attorney in a sincere effort to expedite the prosecution of the application.